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[54] LONGITUDINALLY ELONGATING
BALLOON EXPANDABLE STENT[72] Inventors: Robert E. Fischell, Dayton, Md.;
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606/194, 197, 195, 200; 623/1, 12

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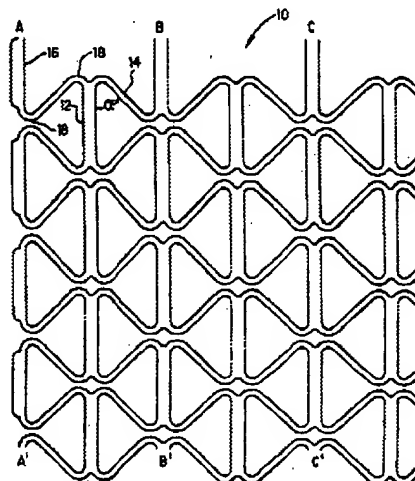
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[57] ABSTRACT

The present invention is designed to overcome several disadvantages of prior art balloon expandable stents. Specifically, the Butterfly Expandable To Honeycomb (BETH) stent described herein consists of a collection of circumferential (or vertical) arc structures and diagonal cross. These arcs and crosses form a butterfly shape before the stent is expanded and a hexagonal, honeycomb type of structure is created when the stent is fully expanded. Until the nominal stent diameter is reached, the deployed length of the stent is actually longer than the non-deployed length. At the nominal fully-deployed diameter, the deployed stent is exactly the same length as the non-deployed length. This characteristic provides better assurance of completely covering a dilated stenosis as compared to a stent that shortens in length when deployed as is typical of all prior art balloon expandable stents. Furthermore, because at least one quarter of the expanded stent's circumference consist of vertical arcs that are arcs of a circle, they provide the BETH stent with improved radial rigidity.

18 Claims, 4 Drawing Sheets



EAST 4/23/02

Best art of subclass search